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Agglutination and Colloidal Reactions

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AGGLUTINATION AND COLLOIDAL REACTIONS

F. W. MULSOW

Many theories have been advanced in explaining the cause of the clumping and precipitation of bacteria by their immune serum. It is generally known that the presence of salt solution is also necessary. In many text books of bacteriology the statement is made that acids and alkalis inhibit the agglutination reaction, but amounts necessary to do this are not given. It has been observed in the present work that alkalis have a stronger inhibiting action than acids. Ammonium hydroxide has very little effect as compared to sodium or potassium hydroxide. The weak acids however have as strong an inhibiting action as the stronger acids. Lactic and butyric acids inhibit in high dilutions.

Certain colloidal solutions have distinct inhibiting action, such as soap solution, 5% acacia solution, dilute solutions of agar. Egg albumin makes the reaction slower but does not prevent agglutination.

Other substances which inhibit the agglutination reaction by their presence are saponin, bile, and bile salts as sodium taurocholate and sodium glycocholate. These substances are known to affect surface tension.

These results are offered as a preliminary report and suggest that the agglutination reaction is dependant upon changes in surface tension and other colloidal properties.

CEDAR RAPIDS, IOWA.

MICROBIOLOGICAL DEATH RATES

C. H. WERKMAN

The form of the survivors' curve when *Staph. aureus* is subjected to the action of bactericides is not constant. It is a function of the organism and the specific bactericide and attempts to conform such curves to one generalized formula, monomolecular or polymolecular, must prove futile. Under identical conditions the survivors' curves are alike in form.

Rapidly penetrating agents such as the alcohols effect a form of